# TB Elimination: Now Is the Time

## Trends Toward Tuberculosis Elimination

**United States** **World TB Day, March 24, 2002**

# TB Is Not a Disease of the Past ... At Least Not Yet

**M**any people think that tuberculosis (TB) is a disease of the past, an illness like smallpox that no longer threatens us today. This is not the case. Yes, TB has been afflicting humans for thousands of years, but it is by no means a disease of the past. Today in the 21st century, TB is still one of the leading global causes of death from infectious disease, even though it is readily treatable and preventable. Each year, approximately 8 million new cases of TB occur and more than 2 million deaths are attributed to TB around the world.

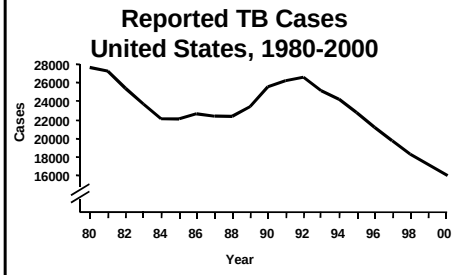
One reason for the belief that TB is a disease of the past is that in the United States, we are currently seeing declines in TB, and are at an all-time low in the number of persons suffering with TB. This provides an opportunity to begin to make TB a disease of the past by eliminating it in the U.S.

The possibility of eliminating TB in the U.S. was raised as early as the 1930s. The discovery in the 1950s of effective antimicrobial drugs to treat TB further advanced this idea. Finally, in the late 1960s the number of cases was low enough that this goal seemed within reach. However, as the number of TB cases continued to decline, so did interest in TB. This led to complacency about TB as a problem and neglect of TB control, most strongly evidenced by the loss of categorical federal funding for TB control in the 1970s.

This loss of funding resulted in a period of resurgence of TB and the occurrence of multidrug-resistant TB (MDR TB) in the U.S. during the late 1980s and early 1990s. The human losses associated with suffering and death as well as the economic losses that occurred during this time were dramatic. However, due to renewed concern about TB, which led to additional TB resources in the early 1990s, the TB control infrastructure has since been revitalized, the resurgence trend appears to be reversed, and TB elimination appears once again within our reach. ■

## Progress Toward TB Elimination in the U.S.

- 2000 data indicate there were 16,377 cases of active TB reported in the United States, representing a 7% decrease from 1999, a 39% decrease from 1992, and an all-time low of active TB cases.




- 2000 represents the eighth consecutive year that TB cases have declined, suggesting that the nation is fully recovered from the resurgence of TB that occurred in the late 1980s and is back on track toward TB elimination.

## TB Poses Greater Challenges Than Ever Before

**A**lthough trends suggest that the nation is advancing toward elimination, significant challenges remain, particularly the increasing impact of the global TB epidemic on the U.S., the continued threat of MDR TB, and the interaction between HIV and TB.

- An increasing proportion of persons with TB were born in areas where TB is common, such as Asia, Africa, and Latin America. TB among individuals living in the U.S. but born in other countries increased from 4,925 (22% of national total) in 1986 to 7,554 (46% of national total) in 2000.

- If individuals with active TB do not complete therapy for 6 months, they can develop and spread strains of TB that are resistant to available drugs. During 1993-2000, 45 states and the District of Columbia reported cases of MDR TB. In 2000, 1% of people with culture-positive TB had MDR TB.

- People coinfected with HIV and TB are up to 800 times more likely to develop active TB disease during their lifetime than people without HIV infection.

In anticipation of some of these challenges, the CDC commissioned a study by the Institute of Medicine (IOM) to determine the feasibility of TB elimination as a national goal. If feasible, the IOM was asked to provide specific recommendations on how to make elimination of TB in the U.S. a reality. ■

*Editor's Note: For additional information about tuberculosis, visit:* http://www.cdc.gov/nchstp/tb

## FINISHING THE JOB

The Institute of Medicine (IOM) report *Ending Neglect: The Elimination of Tuberculosis in the United States*, released in the summer of 2000, determined that yes, TB elimination was feasible. However, the report states that "to meet this goal, aggressive and decisive action beyond what is now in effect will be required." Furthermore, "elimination of TB is not possible with the tools we currently have available. An effective elimination effort will require additional financial resources and a strong and durable commitment by policy makers." (IOM, 2000.)

CDC is encouraged by the reaffirmation of the IOM committee and looks forward to the opportunity to eliminate TB in the United States, once and for all. Six steps have been identified to end neglect and eliminate TB. See side bar for further details. ■

*"We are now at a critical juncture. On one hand we are at an all-time low in the number of new cases. On the other hand, we are particularly vulnerable again to complacency and neglect that comes with declining number of cases."*

*Institute of Medicine Report, 2000*

### Six Steps to End Neglect and Eliminate TB

Based on IOM Recommendations

1. Maintain Control: By strengthening current TB control, treatment, and prevention systems, we ensure the critical interruption of the transmission of TB and prevent the emergence of MDR TB.

2. Accelerate the Decline: By finding better methods of identifying and treating latent TB infection (LTBI) and improving strategies to reach at-risk populations, we will speed our progress toward elimination.

3. Develop New Tools for Diagnosis, Treatment, and Prevention: Through research to develop more effective methods of screening for LTBI and better drugs to treat LTBI, we will find vital ways to stop the progression from infection to contagious disease.

4. Engage in Global TB Prevention and Control: In providing leadership, contributing technical support, and forming international partnerships, we improve global health; worldwide control of TB is in the nation's self-interest.

5. Mobilize Support for TB Elimination: By reaching leaders of high-risk groups, we can offer hope that a disease which burdens their community can be eliminated.

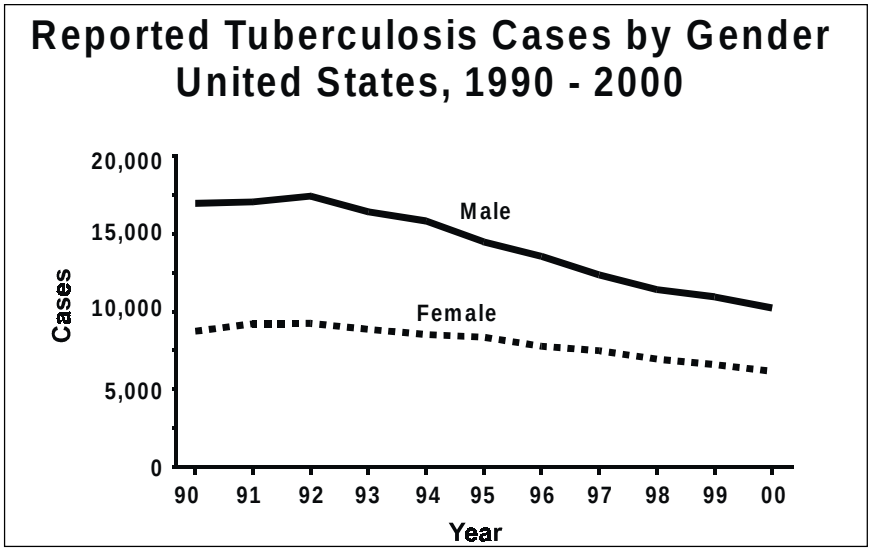
6. Monitor Progress: By assessing the impact of our elimination efforts, we can continually monitor our progress and identify and address any lapses in our efforts.

## A CLOSER LOOK AT THE TUBERCULOSIS EPIDEMIC

### BY GENDER

- Throughout history, TB has had a disproportionate impact on men. This trend was evident in the past decade.

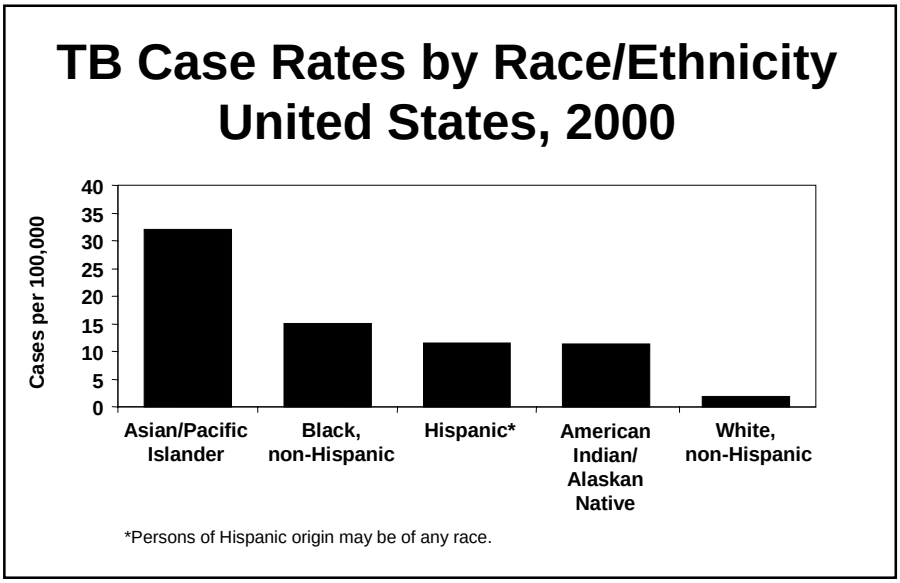
- In 2000, 62% (10,225) of TB cases occurred among men, and 38% (6,148) occurred among women. The rate of TB for men (7.4 per 100,000) was almost double that of women (4.3 per 100,000).



## BY RACE/ETHNICITY

- TB disproportionately affects minorities. In 2000, 77% of all reported TB cases occurred in racial and ethnic minorities.

- In 2000, rates of TB were dramatically higher for Asians/ Pacific Islanders (32.9 per 100,000), African Americans (15.2 per 100,000), Hispanics (10.8 per 100,000), and American Indians/ Alaskan Natives (11.4 per 100,000), than for whites (1.9 per 100,000).




- African Americans had 5,161 reported TB cases; whites 3,674; Hispanics 3,805; Asians/Pacific Islanders 3,451; and American Indians/Alaskan Natives 236.

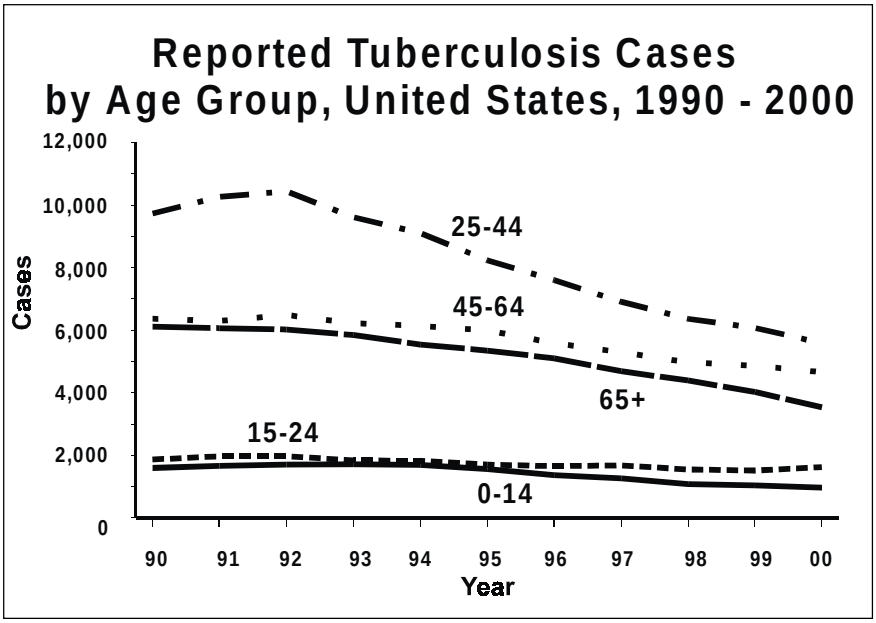
- Several factors likely contribute to the disproportionate burden on minorities. Unequal distribution of TB risk factors, such as HIV infection, as well as the effects of lower socioeconomic status, particularly crowding, contribute to increased risk of TB.

## BY AGE GROUP

Currently, the greatest proportion of TB cases occur among persons aged 25 to 44. Looking at the last decade, two trends by age group emerge:

- During the resurgence, annual TB cases increased most dramatically in the 25- to 44-year-old age group, partially due to the influence of HIV infection and recent immigration of people from areas of high TB prevalence.

- Since 1992, the largest decline in TB cases has been among children under 15 and people 25 to 44 years of age. It is believed that this decline in the 25- to 44-year-old population is largely due to improved TB control in communities with high AIDS rates.



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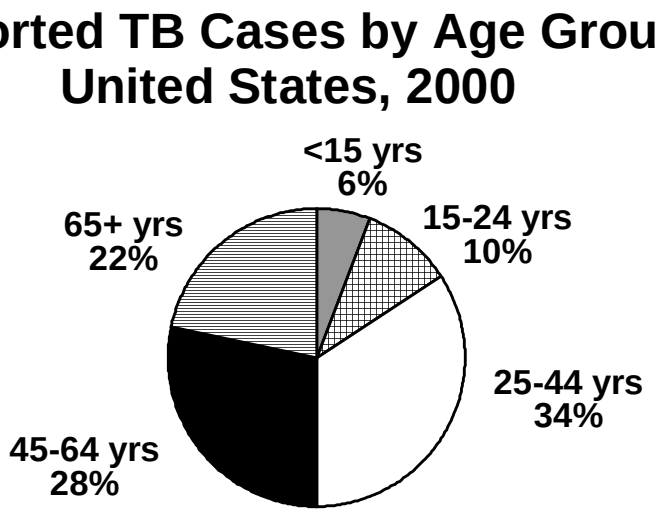



## BY POPULATION

### Groups at Higher Risk of Exposure or Infection

A number of groups may be more likely to be exposed to or infected with TB than the overall population, including health care workers, residents of long-term care facilities, people who are homeless, residents of correctional facilities, and people from countries where TB is common.

*Health Care Workers*

In recent years, CDC has received 400-500 reports each year of TB disease among health care workers, representing 2%-3% of annual cases.

*Residents of Long-term Care Facilities*

CDC receives 500-700 reports each year of TB cases among residents of long-term care facilities, accounting for 3%-4% of annual cases.

*Homeless*

Approximately 1,000 TB cases are reported among the homeless each year, accounting for 5%-6% of annual cases.

*Residents of Correctional Facilities*

Among residents of correctional facilities, 500-700 cases of TB are reported, accounting for 3%-4% of annual cases.

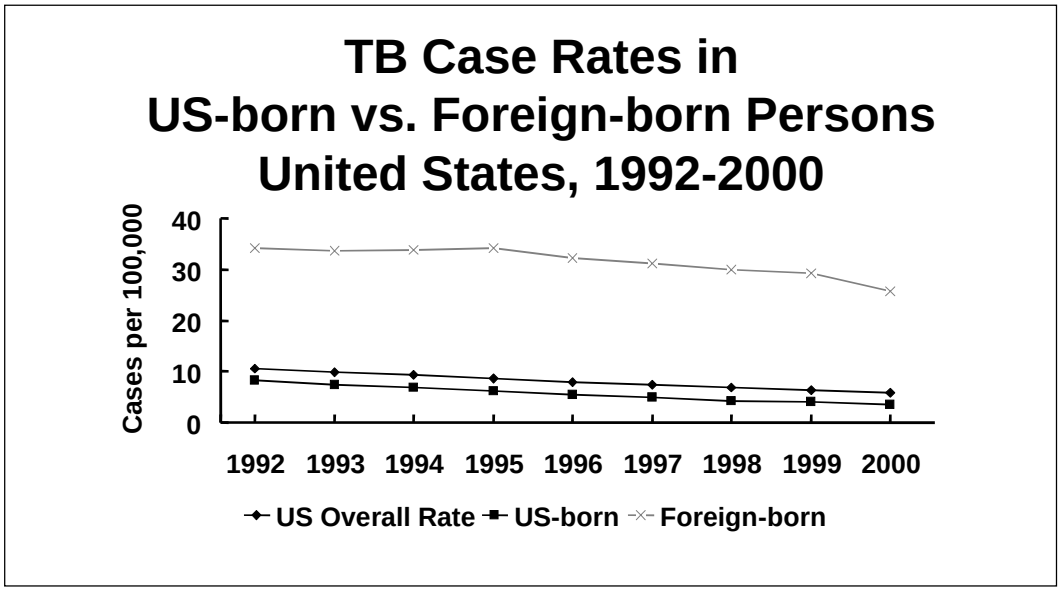
**What populations?**

Certain subgroups of the general population have substantially higher TB rates than the overall population. These groups are considered high-risk populations for TB and can be divided into two categories:

1. Groups at higher risk for exposure to TB bacteria.
2. Groups at higher risk for progression to TB disease once infected with bacteria.

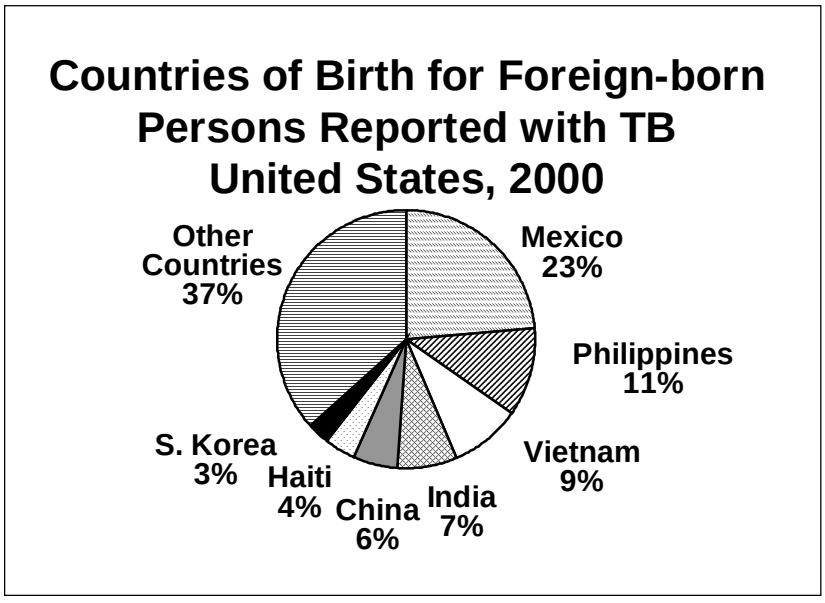
## BY POPULATION (continued)

*U.S. Residents Born Outside the United States*




• One of the most dramatic changes in TB epidemiology over the past decade has been the impact of foreign-born persons on the incidence of TB within the U.S. For example, TB cases continue to decline nationally; however, the overall decrease in TB cases during 1992-2000 was primarily due to a 55% decrease in the number of U.S.-born cases. In contrast, the total number of U.S. cases among residents born outside the U.S. has remained at approximately 7,500 cases each year.

• TB case rates in foreign-born persons remain substantially higher (approximately 7 times) than those in the U.S.-born population. From 1992-2000, the case rate in U.S.-born persons decreased from 8.2 per 100,000 to 3.5, whereas the rates for foreign-born persons decreased minimally (from 34.2 to 25.8).




Risk factors for TB in U.S.-born patients (including substance use, homelessness, residence in a correctional facility, and HIV co-infection) are less commonly identified in foreign-born TB patients. The most important risk factor for TB among these patients appears to be previous residence in an area with a high rate of TB.

# BY POPULATION (continued)

## Groups at Higher Risk for Disease Progression

TB is a serious threat to people with weakened immune systems. In most people with normal immune systems the TB bacteria can be rendered inactive, and these people may never get sick. However, in people with weakened immune systems the TB bacteria may not be kept in check and as a result they are more likely to develop active TB disease. This high-risk group includes people with HIV infection, other specific medical conditions (such as diabetes or cancer), and people who inject drugs. Among people with TB infection, HIV is the strongest known risk factor for progressing to active TB disease.

*HIV and TB Coinfection*

- In 1993, CDC began collecting information on HIV status for TB cases. Reporting of this information has been limited. Less than 50% of TB case reports include HIV test results. CDC is working with state and local health departments to improve reporting of this information, particularly in people aged 25-44.

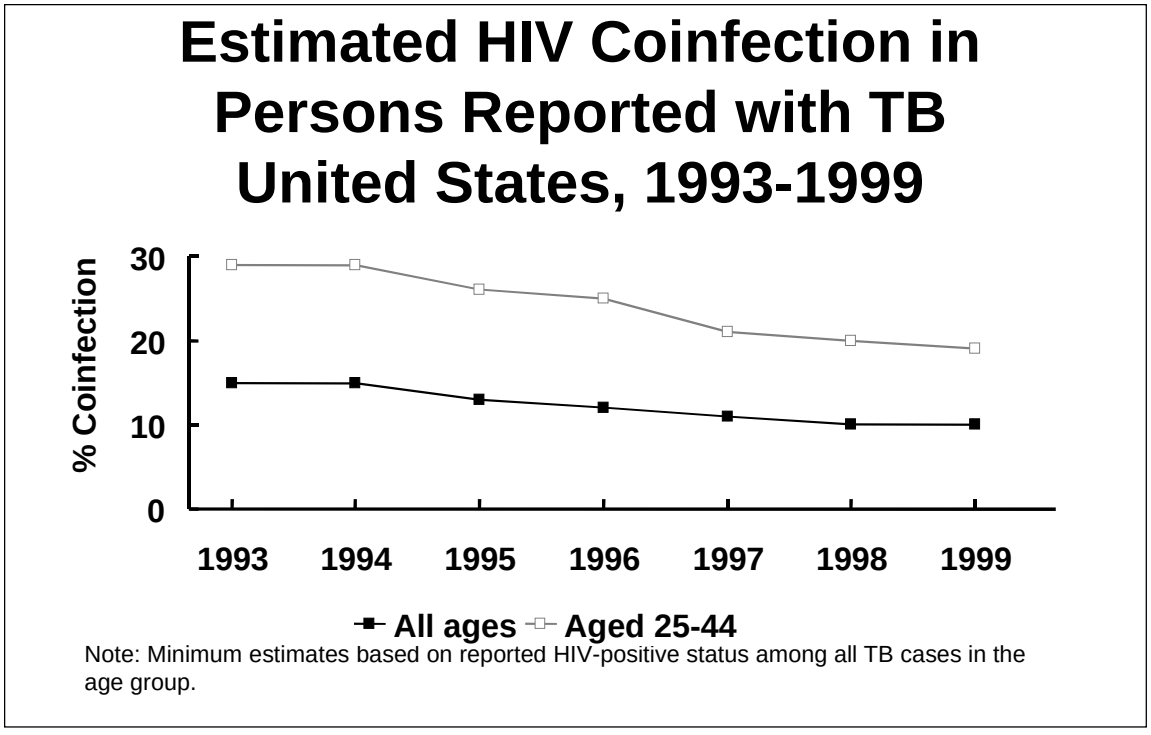
- During the period from 1993-1999*, the estimated percentage of HIV coinfection in persons of all ages with reported TB decreased from 15% to 10% overall and from nearly 30% to 20% in persons aged 25-44.

*1999 is year of latest available data

### HIV and TB Coinfection

Because HIV weakens the immune system, someone with TB infection and HIV infection has a very high risk of developing TB disease.

Without treatment, these two infections can work together to speed up the process from TB infection to TB disease. People coinfected with HIV and TB are up to 800 times more likely to develop active TB disease in their lifetime than someone without HIV infection.

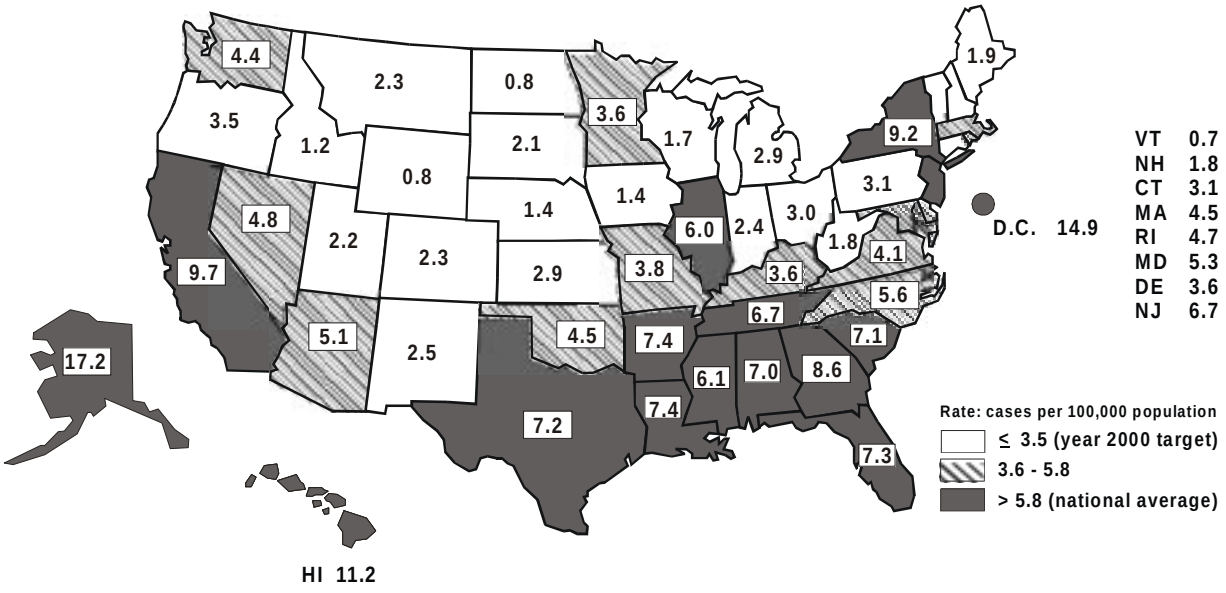



Note: Minimum estimates based on reported HIV-positive status among all TB cases in the age group.

## BY STATE

TB morbidity varies considerably by geographic location. In 2000, 22 states had a case rate at or below the Healthy People 2000 target rate of 3.5 cases per 100,000 people. On the other hand, seven states (California, Florida, Georgia, Illinois, New Jersey, New York, and Texas) that were above the national average accounted for 60% of the national total of TB cases. The proportion of foreign-born cases also varies by state; the number of states with at least 50% of their cases among the foreign-born increased from 4 in 1992 to 21 in 2000. Please refer to the maps below.

# Tuberculosis Case Rates, United States, 2000




# Percentage of TB Cases Among Foreign-born Persons